

REMARKS/ARGUMENTS

Favorable reconsideration of this application in light of the following discussion is respectfully requested.

Claims 4-6, 10-12, 16 and 32-46 are presently pending in this application.

In the outstanding Office Action, Claims 4-6, 10-12, 16 and 32-46 were rejected under 35 U.S.C. §103(a) as being unpatentable over Naruse et al. (U.S. Patent 5,914,187) in view of EP 0 361 883 (hereinafter “EP ‘883”).

First, Applicants acknowledge with appreciation the courtesy of a personal interview granted to Applicants’ representative on December 10, 2008. During the interview, the outstanding issues were discussed and the arguments in support of the claims’ patentability were presented. These discussions are reiterated and supplemented in the followings.

Claim 4 is directed to a honeycomb filter for purifying exhaust gases and recites, *inter alia*, “a plurality of columnar *porous ceramic members*...; and an adhesive layer combining said columnar porous ceramic members with one another and having *a plurality of pores adjusting a thermal capacity per unit volume of said adhesive layer such that said thermal capacity per unit volume of said adhesive layer is lower than a thermal capacity per unit volume of the porous ceramic members*” (emphasis added in italic).

By providing an adhesive layer and/or a coating material layer having such thermal capacity, *the thermal capacity of a honeycomb filter as a whole is effectively lowered without compromising the mechanical strength of the porous ceramic member*, and the adhesive/coating material layer is heated quickly with lesser amount of heat, allowing the porous ceramic member and subsequently the filter as a whole to be heated quickly with lesser amount of heat, providing the porous ceramic filter which better withstands a regenerating process of high-temperature, burning of unevenly accumulated particles in the filter and deters cracking in the porous ceramic filter.

As discussed during the interview, to set the thermal capacity per unit volume of an adhesive layer lower than that of the porous ceramic members without compromising the mechanical strength of the filter as a whole, the materials of the adhesive layer and the porous ceramic members are properly selected, and/or the porosity of the adhesive layer is adjusted to be increased as stated in Applicants' specification.¹ In the Office Action, EP '883 is cited to remedy the lack of the thermal expansion coefficients and their mathematical relationships in Naruse et al. However, EP '883 is directed to a heat exchanger made of ceramic matrix segments. As such, the device disclosed in EP '883 requires that these ceramic segments to be high density ceramic members capable of providing a high heat capacity as a whole. And it is believed that to avoid any compromise to their high heat capacity, the foaming agent must be used in a minimal amount in adjusting its Young's modulus of the bonding material for bonding ceramic matrix segments. That is, a large number of pores in the bonding material would lower the heat capacity of the device, altering the principle of the device. On the contrary, according to the honeycomb filter of Claim 4, the adhesive layer combines *porous ceramic members* to the extent that "*said thermal capacity per unit volume of said adhesive layer is lower than a thermal capacity per unit volume of the porous ceramic members,*" thus requiring much larger amount of pore forming agent. In other word, the use of the foaming agent taught EP '883, *i.e.*, to adjust the Young's modulus of the bonding material bonding high density ceramic segments, would lead away from what is recited in Claim 4.

Furthermore, as presented in the Preliminary Remarks filed on June 27, 2008, if the ceramic material has a higher porosity than the bonding material with pores formed by the pore forming agent, the thermal capacity per unit volume of the ceramic material would remain lower than that of the bonding material. Hence, the addition of the foaming agent into

¹ See Specification, page 46, lines 17-30.

the bonding material simply for adjusting the Young's modulus as described in EP '883 *would not necessarily result in the thermal capacity per unit volume of the adhesive layer being lower than that of the porous ceramic members.* It is therefore respectfully submitted that EP '883 *does not inherently disclose* an adhesive layer having pores adjusting its thermal capacity per unit volume to be lower than that of the porous ceramic members.

Regarding Naruse et al., it is believed that nowhere does Naruse et al. mention or suggest the thermal capacity per unit volume of an adhesive layer and the thermal capacity per unit volume of porous ceramic members, nor is Naruse et al. believed to identify their thermal capacity per unit volume as a parameter for any improvement. As such, even assuming *arguendo* that a spectrum of candidate materials for the adhesive layer and porous ceramic members are described, it is believed that the thermal capacity per unit volume of an adhesive layer and the thermal capacity per unit volume of the porous ceramic members cannot be adjusted without compromising the mechanical strength of the filter as a whole.

Based on the foregoing discussions, it is respectfully submitted that neither Naruse et al. nor EP '883 teaches or suggest "an adhesive layer combining said columnar porous ceramic members with one another and *having a plurality of pores adjusting a thermal capacity per unit volume of said adhesive layer such that said thermal capacity per unit volume of said adhesive layer is lower than a thermal capacity per unit volume of the porous ceramic members*" as recited in Claim 4 (emphasis added in italic) and that the teachings of Naruse et al. and EP '883 even combined would not render the honeycomb filter recited in Claim 4 obvious.

Likewise, Claims 10 and 16 are believed to include subject matter substantially similar to what is recited in Claim 4 to the extent discussed above. Thus, Claims 10 and 16 are also believed to be distinguishable from Naruse et al. and EP '883.

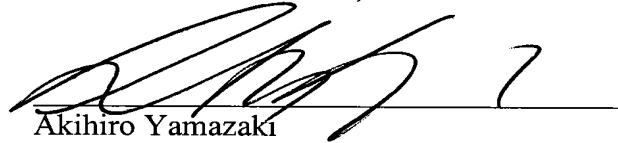
For the foregoing reasons, Claims 4, 10 and 16 are believed to be allowable.

Furthermore, since Claims 5-6, 11-15 and 32-46 depend directly or indirectly from one of Claims 4, 10 and 16, substantially the same arguments set forth above also apply to these dependent claims. Hence, Claims 5-6, 11-15 and 32-46 are believed to be allowable as well.

In view of the discussions presented above, Applicants respectfully submit that the present application is in condition for allowance, and an early action favorable to that effect is earnestly solicited.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.

A handwritten signature in black ink, appearing to read 'Akihiro Yamazaki', is written over a horizontal line.

Akihiro Yamazaki
Attorney of Record
Registration No. 46,155

Customer Number

22850

Tel: (703) 413-3000

Fax: (703) 413 -2220

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